Clean Air Facts

Requirements for Flexographic and Rotogravure Printing Operations

SBCA-FPG-0901

Chapter NR 422 of the Wisconsin Administrative Code covers the control of volatile organic compound emissions from surface coating, printing and asphalt surfacing operations. In section NR 422.14, Wis. Adm. Code, flexographic and rotogravure printing operations are addressed. This fact sheet provides a summary of the requirements for those operations. The location and size of your printing operations will determine how this regulation affects you. In counties that do not meet the air quality standard for ozone (listed below), the threshold for the size of facilities affected is smaller than in the counties that meet the standard.

Exemptions to the Regulation

Not every printer flexographic or rotogravure presses needs to comply with this regulation. You can qualify for an exemption if:

◆ Your facility is located within Kenosha, Milwaukee, Ozaukee, Racine, Washington or Waukesha county and your MTE (maximum theoretical emissions) for VOCs are less than 25 tons per year; or

◆ Your facility is located outside Kenosha, Milwaukee, Ozaukee, Racine, Washington or Waukesha county and your MTE (maximum theoretical emissions) for VOCs are less than 100 tons per year.

Your MTE is the amount of pollution you could emit if you operated at maximum capacity level, 24 hours a day, 365 days per year. If you are not exempt under the levels above but your coating and ink usage never exceeds 55 gallons over any 12 consecutive month period, you do not have to meet any of the applicable requirements described here.

How do I Comply With This Regulation?

If your press will not meet any of these exemptions you will need to do **one** of the two following options:

1. Meet an emission limit.

Your inks would need to meet one of the following emission limitations:

➪ The volatile fraction* of ink (as it's applied to your substrate) will have to contain 25% or less of VOC by volume, and 75% or more of water (including any compounds defined as non-VOC) by volume; or

➪ The ink (as applied and minus water and other non-VOC compounds) contains 60% by volume or more of nonvolatile material.

**The volatile fraction of the ink includes VOCs, non-VOCs and water. DNR has a list of organic compounds that are defined as non-VOC. Contact the Small Business Clean Air Assistance Program (SBCAAP) staff for that list of compounds.*

2. Install a control device.

You can choose to use higher VOC inks, but if you do you will then need to install some sort of control device. Acceptable control devices would include:

✗ A vapor recovery system which would capture and reduce VOC emissions by 90%, by weight.

✗ An incinerator or catalytic oxidation system that would destroy the VOCs by 90%, by weight.

✗ An alternative method of control approved in writing by DNR.

Controlling emissions by installing an incinerator (a.k.a. thermal or catalytic oxidizers) destroys or reduces the VOCs by the process of combustion. Vapor recovery systems include equipment such as carbon adsorbers or condensers. Use of a carbon

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adsorber collects the VOCs on some aborbing material, which then has to be desorbed and sent off-site for treatment or reuse. A refrigerated condenser collects the VOCs by cooling the exhaust air, which is also collected for off-site treatment or reuse. A more recently available alternative for many operations is a biofiltration system that destroys the VOCs using microbes. These control devices are highly complex and would require an outside consultant to design and install one at your facility. *The SBCAAP has a list of consultants and a fact sheet on how to choose a consultant.*

Any control device will have to achieve an overall control efficiency at the following levels as applicable:

✗ 60 percent of emissions from flexographic presses;
✗ 65 percent of emissions from packaging rotogravure; and
✗ 70 percent of emissions from publication rotogravure.

To control emissions from a flexographic press by 60 percent <u>overall</u> means that the combination of the capture system and control device must <u>remove and destroy</u> 60 percent of the VOCs from the press(es). If the emissions from the affected press(es) are not isolated (e.g. they are just released in the general building air) then you may have to enclose and capture those emissions somehow.

Maintain Records

You will be required to maintain certain records depending on which of the compliance options you have chosen.

A. If You Meet One of the Emission Limits.
You will be required to maintain the following records <u>on a daily basis</u> to demonstrate you meet an emission limit:

① A unique name or identification for each coating, as applied;
② The VOC content of each coating, as applied, in the units necessary to demonstrate compliance.

B. If You Installed a Control Device
There are more frequent records required for a control device, because it has to be shown that it was controlling the emissions <u>continuously</u>:

① The <u>operating parameter(s)</u> for the control device should be recorded at least once every 15 minutes.
② A log of operating time for the capture system, control device, monitoring equipment and the associated press stations.
③ A maintenance log for the capture system, control device, and monitoring equipment detailing any maintenance performed and including dates and duration of any outages.

An operating parameter may be one or more characteristics of the control device, depending on the device you installed:

✗ bed temperature for thermal incinerator;
✗ inlet and outlet temperature to bed for catalytic incinerator;
✗ time in adsorption phase for adsorber bed;
✗ temperature of collected solvents in condenser;
✗ pH and moisture content of a biofilter's media.

These are just a few possibilities for operating parameters. Your DNR air permit writer or compliance inspector can work out with you what parameters would be appropriate for your control device.

Will I Require a Permit?

Only the smallest presses might be exempt from either construction or operation permits. If you're installing a new press or have an existing press, contact the DNR or the SBCAAP for fact sheets and/or permit application materials. The fact sheets "Air Pollution Permits for Small Businesses" and "VOC Sources and Construction Permits" can help you with the calculations to determine if the rule or the permit requirements apply to you.

Contacts for More Information or Assistance.

The Small Business Clean Air Assistance Program helps smaller businesses understand and comply with the Clean Air Act regulations. Contact one of the program's Clean Air Specialists for more assistance: Renée Lesjak Bashel at 608/264-6153 or Tom Coogan at 608/267-9214.

For further information on the flexograpic printing regulations contact your DNR Regional or Service Center office shown on the **DNR Contact Fact Sheet** or the DNR's Printing Sector Specialist at 608/355-0811.